



NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
Grosvenor Lodge, 1017 Western Road, London, ON. N6G 1G5
(519) 645-2844



January, 1995

95-1

ROYAL TOMBS OF THE MOCHE: RECENT EXCAVATIONS ON THE NORTH COAST OF PERU

Dr. C.B. Donnan
Fowler Museum of Cultural History, UCLA

Something just a little different this month! Come on out and see this presentation on some of the most spectacular finds and type of archaeology you'll find this side of the Atlantic Ocean! Location information is on the flyer that was included in this month's mailing, so please refer to that form more details. See you up at the University on February 9th at 8PM!

Next Month: In March we'll feature John MacDonald, recounting his tales from up in the Arctic, searching for the lost Franklin Expedition members. This will be a make-up from when John had to cancel in January. Meeting time is 8 PM at Grosvenor Lodge, on March 9th.

Chapter Executive

ANNUAL RATES

Individual.....	\$15.00
Family.....	\$18.00
Institutional.....	\$21.00
Subscriber.....	\$17.00

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EXECUTIVE REPORT

At the January Speaker Night, Chapter Treasurer Harri Mattila reported on the 1994 finances for the London Chapter. While we still have a sizeable holding of capital, a close read of the financial statement (enclosed at the end of this issue of *KEWA*) shows that we are fast approaching a crisis point - can we afford to continue to publish books, and can we afford not to? At present, membership dues are paying for most of the costs related to producing *KEWA*. However, we are managing to spend close to three thousand dollars a year more than we take in from memberships. This goes to everything from Grosvenor Lodge rental fees, social events, sponsoring projects and supporting other organizations, etc. Fortunately, over the last several years the profits that we have made from publications have covered those greater costs (this includes the ten thousand dollar grant we received in 1990 from the OHF for publishing the prehistory book). However, that means that we have not been able to funnel the profits from book publications back into the publication pot. And with your average book costing the Chapter between eight to ten thousand dollars a pop to produce, and given the 2-4 year length of time it takes to re-coup money and make a real profit from any book we publish, we are very shortly going to be in a situation where we will not have the funds up front to pay for the production of a manuscript. And if that happens, we won't continue to receive funds from book sales that can help pay for the host of other activities we do on an annual basis, which ultimately will undermine our ability to be anything more than a newsletter and speaker night organization.

While it's premature to start writing off the Chapter's publication and advocacy activities yet, we should look at this as a sort of Early Warning. Towards that end the Chapter Executive, at a recent meeting, agreed to form an Operations Committee, to be composed of Executive members and other Chapter members. This group will review our finances, poll the membership on what the Chapter's priorities should be, and make recommendations back to the Executive on steps that can be taken to correct our current problems. This group will also explore the possibility of developing a budget for the Chapter, so that realistic spending expectations can be set and monitored throughout the year. This committee will consist of 2 Executive members and 3 members at large. If you think you'd like to help out on this committee, please contact the Executive ASAP.

* * * * * HERITAGE WEEK * * * * *

ARCHAEOLOGY OPEN HOUSE, TUESDAY, FEBRUARY 21st

The Ministry of Transportation Archaeology staff invite you to an open house for Heritage Week, at 55 Centre Street. Artifact Displays, identification of artifacts, and flint knapping demonstrations will be provided. Everyone is welcome between 1 PM and 9 PM.

For more information, call 438-9595

EDITOR'S REPORT

This month we feature an article submitted by Bud Parker, the ever active principal of the consulting firm Archaeological Research Associates. Bud's paper describes the results of work done on the Grand River in advance of a Union Gas Line project. Who knows what else is waiting archaeologists along those stratified floodplains of the Grand?

THE JOHNSON FLATS SITE (AGGX-214): A STRATIFIED PREHISTORIC OCCUPATION ON THE LOWER GRAND RIVER FLOODPLAIN

L.R. Bud Parker

Introduction

In 1994 the archaeological assessment of a proposed natural gas pipeline easement in the community of Caledonia in the Regional Municipality of Haldimand-Norfolk resulted in the discovery of three prehistoric archaeological sites (ARA 1994a). To mitigate the impacts of pipeline installation, all sites were subjected to Stage 3 and/or Stage 4 archaeological studies (ARA 1994a, 1994b). One of these sites, named Johnson Flats (AgGx-214), is located on the Grand River floodplain and archaeological work at the site identified stratified cultural deposits below the relatively sterile plough-disturbed topsoil. Sites such as Johnson Flats are not unique, but because of their depth below the surface few archaeologists and/or funding agencies are seemingly willing to commit time or money for their study. The 1994 excavations at Johnson Flats yielded Early, Middle and Late Archaic materials, as well as transitional Middle to Late Woodland "Princess Point" data in stratified contexts.

Physiographic Setting

The Johnson Flats site is located within the large physiographic region known as the Haldimand Clay Plain (Chapman and Putnam 1969). In the Caledonia area, the Grand River has cut a deep valley into the clay and silt of the clay plain. Consequently there has been much dissection by tributary drainage. The better-drained soils are represented by Oneida clay loam which are found in the dissected area along the Grand River where sediments are somewhat silty. The Caledonia area also has a scattered group of drumlins buried in moderately dissected clay beds (Chapman and Putnam 1969:256). The site itself is situated on the floodplain in silty soil, atop an abandoned 'bar' or island (Figures 1-3).

The trees of the area are remnants of the original Carolinian biome, a largely deciduous forest which exists along the southern fringes of Southwestern Ontario (Mason 1981:60). Tree species at the site are bottom-land types, such as black walnut, willow, elm, swamp white oak and black ash.

The Johnson Flats site has been ploughed in the past, but for the last 30 years it has remained fallow, and is currently used by the Johnson family for recreational activities (eg. camping). The existing river edge is some 10 metres north of the excavated portion of the site, and the river is currently at an elevation of 183 metres above sea level. Sedimentation from post-1800 AD land clearing in the Grand River watershed has probably resulted in the accumulation of over 30 centimetres of silt which overlies the original pre-European topsoil surface (see Figure 4).

Johnson Flats was discovered in July 1994 during a Stage 2 archaeological assessment of a proposed natural gas pipeline easement. This proposed easement follows the eastern edge of the Johnson property. Since the Johnson property cannot be ploughed, the proposed pipeline easement was subjected to test pitting at five meter intervals. South of the river, the Johnson property consists of a drumlin, and near its summit was discovered another site named Johnson Heights (AgGx-213), a large lithic scatter in plough-disturbed clay soils (ARA 1994a, 1994b). Johnson Heights is typical of many prehistoric lithic scatters in the Haldimand Clay Plain, being rich in debitage, but poor in formal tools, and no cultural affiliation has been assigned due to the fact that no diagnostics were recovered (ARA 1994a:8, 1994b:7).

Johnson Flats was subjected to the required test pitting assessment, but it was quickly noted that the topsoil consisted of over 50 centimetres of rich, brown silt, overlying a mottled brown silty layer, and that sterile subsoil was almost 70 centimetres below the surface (Figure 4). The floodplain segment of the proposed pipeline easement begins at the base of the steeply sloped north face of a drumlin. At the base of the drumlin towards the river bank (a distance of approximately 50 metres), there is an abandoned river channel, and between this old channel and the existing river there is a plateau which is about one meter higher than the surrounding floodplain (Figure 2). At the north edge of the plateau test pitting yielded chert flakes and calcined bone, and a series of secondary test pits and one meter test squares resulted in the recovery of 584 artifacts (ARA 1994a). Most of these artifacts were lithic (chert debitage and tools), but ceramics, fire cracked rock, and bone were also found. Preliminary interpretations concluded that this site was narrow (limited to the plateau area), but of unknown length, since the plateau is over 100 metres long, and our studies were restricted to the proposed pipeline easement.

Stage 4 excavations to mitigate the impacts of pipeline installation of the proposed pipeline consisted of the excavation of 46 one metre units (in addition to the 15 one meter units excavated during Stage 3 studies) (ARA 1994a, 1994b). The proposed pipeline at the site is to "emerge" into a "receiving well" after it has been under-bored from the north, beneath the bed of the Grand River, and from the receiving well the pipeline will be laid into a trench less than a meter wide as it continues south along the property boundary (ARA 1994a:14). Since the overlying plough-zone portion of the topsoil was found to be almost sterile it was removed and not screened. At a depth of 30 centimetres below the surface the excavation technique involved trowelling the soil into buckets and the contents of these were screened through 6 millimetre wire mesh. The excavation proceeded downward, following natural stratigraphy, until sterile subsoil was encountered. Any artifacts encountered during the trowelling process were plotted both vertically and horizontally. The resulting top plans of each one meter unit show the artifact distribution from cultural strata which ranges between 30 and 75 centimetres below the surface.

Other than a series of historic post moulds, only two distinct subsurface features were encountered in our excavations. The first feature, found in unit 50E7S, was interpreted to be natural since it contained no artifacts, despite its dark brown colour. The second feature, found in unit 52E4S, was

GRAND RIVER

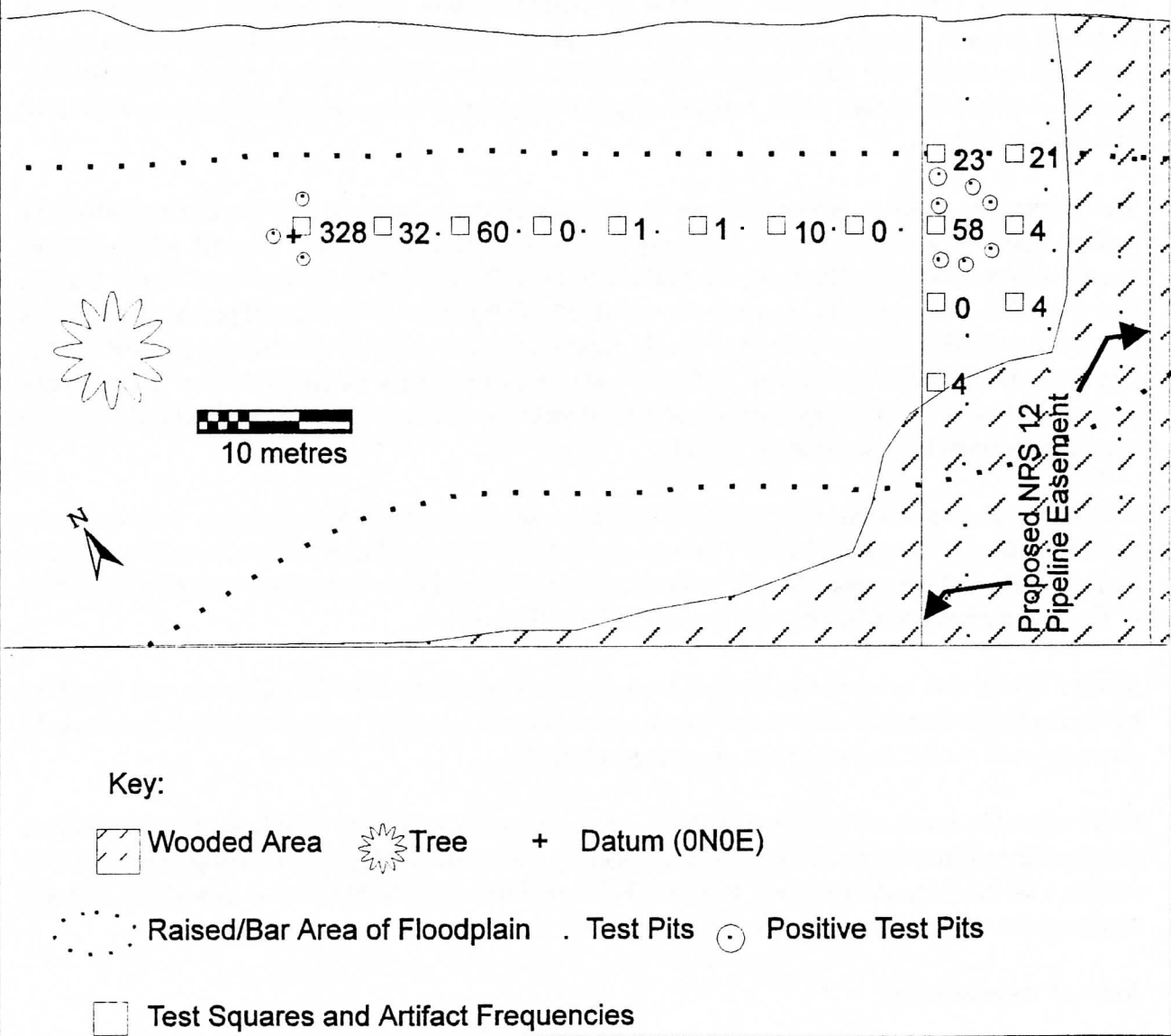


Figure 2: Location of AgGx-214, and Depiction of Stage 3 Excavations.

reddish brown in colour and is thought to have been a hearth, since it was surrounded by a large concentration of calcined bone. Additional areas of note include "concentrations" of artifacts/ecofacts, which may have been features and/or activity areas, but they do not exhibit a change in soil colour.

Site Stratigraphy

One of the most interesting aspects of Johnson Flats is the fact that it consists of buried cultural strata which have been capped by recent sediments. Stratified sites have been documented previously in the vicinity, such as at the Cayuga Bridge and Grand Banks sites, located downstream and studied by both Stothers (1977), and the University of Toronto (Dave Smith: personal communication). Although Johnson Flats does not consist of over 10 metres of stratigraphy marked by cultural layers separated by sterile soils like those sites found in the Tennessee River valley and other Eastern U.S. sites (Coe 1964; Chapman 1980), it is nevertheless one of only a few stratified sites ever excavated in Southern Ontario.

The stratigraphy at Johnson Flats (Figure 4) was examined to a depth of 170 centimetres below the surface. The lowest stratum (F) is a pale grey marl containing limestone and clay till, which lies just above the parent bedrock. Overlying the marl is a thick, culturally sterile layer of light brown silt (E). Overlying this silt is a stratum of orange-brown silt containing charcoal flecks and prehistoric artifacts (D), while overlying this is a stratum of black, organic silt loam, also rich in artifacts (C). Finally the upper strata consists of a layer of sod/root mass (A), overlying a plough-disturbed layer of dark brown silty loam (B). Although Strata A and B did yield the occasional artifact, the cultural materials were predominately from Strata C and D.

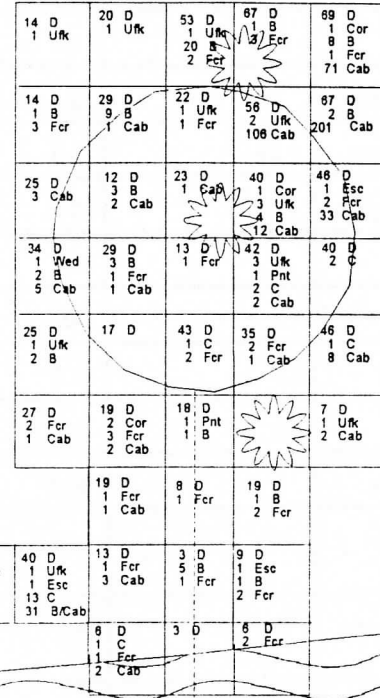
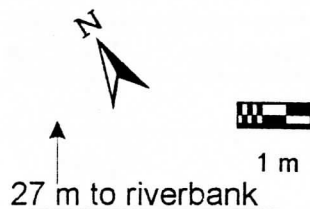
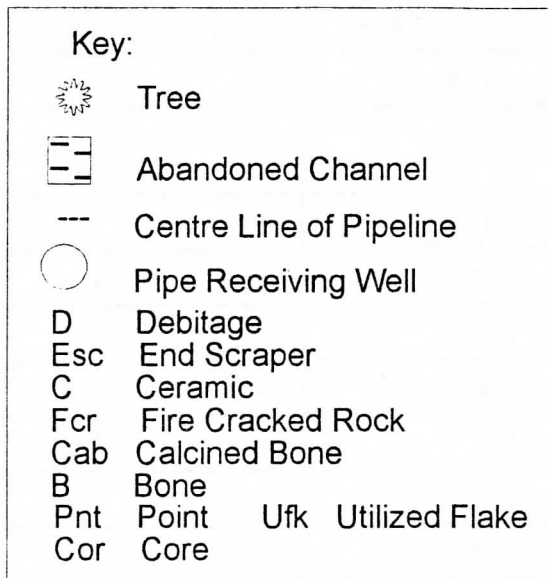
The cultural stratum labelled C at Johnson Flats varies slightly in depth and thickness, but it has been definitely identified as a "paleosol", or a buried topsoil horizon (Dave Smith: personal communication). As such it represents the original surface of the floodplain which existed prior to the arrival of European and/or Six Nations settlers of the late 18th century.

Stratum D may also be a paleosol that has been subjected to leaching over the millennia, and therefore has less organic content. It does contain some wood charcoal and other organic materials, but it could also represent the 'b' horizon of the overlying paleosol.

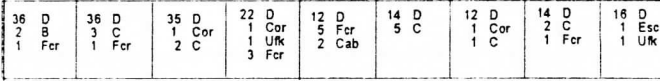
More research needs to be completed on the developmental history of this stratigraphy before definitive statements can be made. However, generally it is noted that Stratum C contained diagnostic artifacts of the Late Archaic and Princess Point traditions, while Stratum D contained artifacts diagnostic to the Early and Middle Archaic period.

Artifact Assemblages

The cultural artifacts and ecofacts recovered at Johnson Flats include chipped lithic (chert) debitage and tools, ceramics, and faunal and floral remains. In sum, 2,516 artifacts and ecofacts were found at the site from all stages of fieldwork (Table 1).



Western Limit of
Pipeline
Easement



Property
Line

40E 41E 42E 43E 44E 45E 46E 47E 48E 49E 50E 51E 52E 53E

Figure 3: Stage 4 Excavations at AgGx-214.

Table 1
Johnson Flats (AgGx-214) Artifact Frequencies

Artifact Type	Frequency	% Total	% Bois Blanc	% Onondaga	% other chert
Flake Fragments	1006	40	12.9	97.1	0
Secondary Flakes	492	19.6	10.4	89.6	0
Shatter	216	8.6	10.6	89.4	0
Primary Flakes	58	2.3	12.1	87.9	0
Utilized Flakes	19	0.8	10.5	89.5	0
Projectile Points	5	0.2	0	60	40
Bifaces	3	0.1	0	100	0
Wedges	2	<0.1	0	100	0
Endscrapers	5	0.2	20	80	0
Cores	8	0.3	25	75	0
Bifacial knife	1	<0.1	0	100	0
Undecorated body sherds	39	1.6	-	-	-
Decorated body sherds	6	0.2	-	-	-
Calcined bone	496	19.7	-	-	-
Large mammal bone	48	1.9	-	-	-
Small mammal bone	15	0.6	-	-	-
Bird bone	1	<0.1	-	-	-
Unknown class bone	3	0.1	-	-	-
Deer teeth	25	1	-	-	-
FCR	63	2.5	-	-	-
Charcoal	4	0.2	-	-	-
Floral remains	1	<0.1	-	-	-
Total	2516	100	-	-	-

Lithics

The majority of recovered artifacts are chipped lithics, largely made from Devonian cherts available locally from primary contexts to the south in a band 15 kilometres wide, north of Lake Erie (Eley and von Bitter 1990). The debitage portion of this sample includes flake fragments, secondary flakes, shatter, and primary flakes, representing over 70% of the entire artifact sample. The large percentage of flake fragments and secondary flakes (nearly 60%) indicates that the excavated areas of the site represent tool finishing and refurbishing activities, rather than core reduction and tool blank production. Also, it is interesting to note that the debitage types (shatter, secondary flakes, primary flakes, etc.) are consistently made up of 87-90% Onondaga formation chert and 10-13% Bois Blanc formation (Haldimand) chert. Both of these cherts are locally available, but the primary sources of Onondaga chert are found farther south than the Bois Blanc formation (Haldimand) chert sources (Parker 1986; Eley and von Bitter 1989).

The recovered small bifaces and projectile points include diagnostic examples from the Archaic period and possibly the Princess Point period (Table 2). Examination of all recovered projectile points revealed Early, Middle and Late Archaic period types. Two points are complete and were found during Stage 3 work at the site (ARA 1994a), and these two are the only ones made on Kettle Point chert (Figure 5: d,e). Morphologically these two small points are most like Early to Middle Archaic "Stanly-stemmed" points, dating to ca. 8000 to 5500 BP (Ellis et al 1990:80-81). Alternately, these two small points, in their heavily resharpened state, also resemble Late Archaic types such as Lamoka or Crawford Knoll (Ellis et al 1990:97). One of these two points was found in the plough-zone (Figure 5:d), not in a stratified context. The other (Figure 5:e) was found within the lower cultural stratum (Stratum D) in unit 0N0E in association with the basal portion of another point made on Onondaga chert and exhibiting side notches, basal grinding and possible "Brewerton" point type attributes. Middle Archaic period Brewerton type points are dated to circa 5000-4500 BP (Ellis et al 1990:72).

Table 2
Johnson Flats AgGx-214 Projectile Point Attributes
(measurements in millimetres)

cat#	BS	BSS	RM	L	BL	BW	IW	SW	BH	BSW	NH	T
1211	exc	s	On	39	29	36	19	n/a	10	n/a	7	8
185	tri	n/a	On	n/a	n/a	32	n/a	n/a	n/a	n/a	n/a	9
1278	tri	n/a	On	n/a	n/a	73	n/a	46	n/a	n/a	n/a	16
216	tri	s	KP	26	19	26	n/a	10	7	9	6	5
217	tri	s	KP	30	25	21	n/a	10	5	10	10	6

Key: exc=excavate, tri=triangular, s=straight, ON=Onondaga, KP=Kettle Point, BS=blade shape, BSS=base shape, RM=raw material, L=max. length, BL=blade length, BW=blade width, IW=inter-notch width, BH=base height, BSW=base width, NH=notch height, SW=stem width, T=thickness.

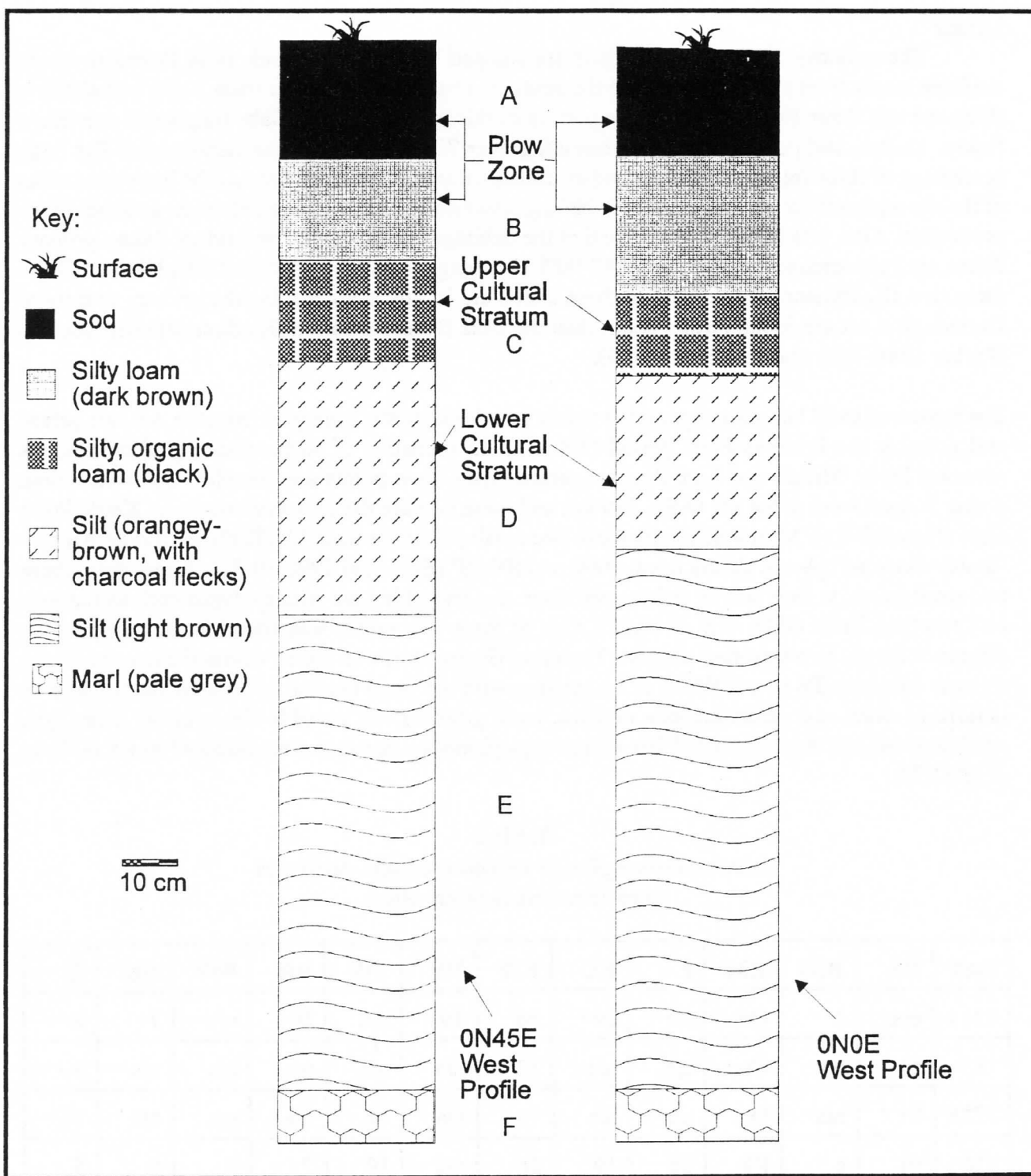


Figure 4: Soil Profiles From Two Excavation Units at AgGx-214.

Table 3
Johnson Flats AgGx-214 Scrapers and Utilized Flakes Attributes
 (measurements in millimetres)

Cat#	Flake type	Length	Width	Thick-ness	Use-wear				Chert type
					Loc	Type	Shape	Length	
961	sfk	17	12	4	lv	sc	s	8	On
720	sfk	32	14	3	dl	sc	cc	6	On
1756	sfk	35	15	3	dl	sc	cv	8	On
1622	sfk	37	22	6	dl	sc	s	20	On
530	pfk	46	24	15	dd	sc	s	6	BB
960	sfk	22	15	5	dv/dl	sc/fc	cv/s	61	On
816	sfk	17	11	3	dl/dd	sc	cv	21	On
172	pfk	22	21	3	dl/dd	sd/sc	cc/s	24	On
1701	sfk	42	27	5	dl	sc	s	3	On
1552	sh	25	18	5	dl	sc	cc	3	On
1412	pfk	20	17	7	dl	sc	cv	28	On
885	sfk	33	21	3	dd	sc	s	5	On
1566	sfk	23	12	2	lv	sc	cc	11	On
817	pfk	21	15	6	dl	sc	s	14	On
531	pfk	34	20	10	dl	sc	s	3	On
1855	pfk	27	19	5	dl/lv	fc	cv	16	On
2189	sfk	30	22	5	dl	fc	cv	29	On
2188	pfk	37	22	7	dl	sc	s	11	On
2190	sfk	29	13	3	dl	sc	s	13	On
218	pfk	36	28	7	dl/lv	fc	s	28	On

Key: Loc=location, sfk=secondary flake, pfk=primary flake, sh=shatter, lv=lateral ventral, dl=dorsal lateral, dd=distal dorsal, dv=distal ventral, sc=steep continuous, fc=flat continuous, sd=steep discontinuous, s=straight, cc=concave, cv=convex, On=Onondaga, BB=Bois Blanc.

The Archaic period is further represented by the recovery of a Middle Archaic "Brewerton" type projectile point found in unit 51E8S (Figure 5:b). This corner-notched example (made on Onondaga chert) is known as a "bunt", since it has a rounded blade shape, probably created after the blade was resharpened for use as a scraper/ulu/knife. The Brewerton point type dates to ca. 5000-4500 BP (Ellis et al 1990:72).

A large diagnostic "Broad point" preform from the Late Archaic period (ca. 3500 BP) was found during the mitigation phase of our work at Johnson Flats in unit 52E6S, Strata C (Figure 5:g). As demonstrated by other researchers (eg. Kenyon 1981), this is a Genesee type Broad point preform in its classic pentagonal shape (Ellis et al 1990:100,102), made of Onondaga chert and used (or destined to be used) as a knife.

Utilized flakes and formal scrapers, representing approximately 1% of the entire artifact sample, indicate that chert tools were being used at the site for activities such as food processing, tool making and/or hide working. While most of these tools are expediently-made utilized flakes, a few formal end scrapers and side scrapers were recovered. None of the tools are diagnostic of any particular prehistoric culture, although the small end scrapers are similar to those associated with the Late Archaic "Small point" tradition (Ellis et al 1990:109-110). The attributes of the recovered utilized flakes and scrapers are shown in Table 3.

A total of eight (8) chert cores and/or core fragments were recovered during the investigation of the Johnson Flats site, and two of these were of Bois Blanc formation (Haldimand) chert, while the remainder were of Onondaga chert. Cores were brought to the site to furnish a supply of raw material for chipped lithic tools. The relatively small number of cores from the excavations may indicate that primary chert reduction was not a dominant activity, and this is supported by the large percentage of final reduction sequence debitage (secondary flakes and flake fragments) seen in Table 1. Table 4 summarizes the main attributes of the complete cores found at the site.

Table 4
Johnson Flats AgGx-214 Core Attributes
(measurements in millimetres)

Catalogue #	Core type	Length	Width	Thickness	Chert Type
1078, 1079	block	57	40	25	Bois Blanc
695	block	46	37	26	Onondaga
2231	block	60	36	31	Onondaga

A final lithic artifact found at the site is fire-cracked rock (FCR). Although FCR is not the product of stone tool production, it is often caused by human-produced fires associated with camping and food preparation. The natural soils of the site consist of silt which is relatively stone free, but cobbles

are plentiful in the abandoned river channel which runs along the base of the drumlin south of the site. FCR was found throughout our excavations at the site, but was not found in any concentration which would be identified as a feature.

Ceramics

About 2% of the recovered artifact assemblage consists of prehistoric ceramic vessel sherds. The ceramics found all appear to be similar in manufacturing technique and decorative motifs. No rims sherds were recovered, but decorated neck and body sherds show definite cord marking, a lack of incising, occasional coil breaks and large grit (Figure 5:f). Some body sherds are very thin and smooth on both exterior and interior surfaces. These ceramics are thought to be of the very early Iroquoian period, or more specifically of the Princess Point complex dating to ca. AD 600-900 (Stothers 1977; Fox 1990:171). Metric and non-metric attributes are summarized for the ceramic sample in Table 5.

No large concentrations of ceramics were found in any of the excavated areas at the site. Also, no sherds were found below a depth of 45 centimetres below the surface. The fact that most of the ceramics were found in the upper cultural level (Stratum C) may indicate that there is a definite Archaic to Woodland stratigraphic sequence at the site.

Floral and Faunal Remains

Faunal remains were analyzed by Rosemary Prevec (Prevec 1994). Before her analyses are presented, it should be noted that calcined bone was found in Stratum D, and both calcined and unburnt bone was found in Stratum C. Large mammal bone was noted, and white-tailed deer was identified during excavation since several teeth were found. In the northeast corner of the excavated portion of the site we did find a large, deep concentration of calcined bone (see Figure 3). This concentration of burnt bone was found near the possible hearth feature mentioned above.

The analysis of the faunal remains resulted in the positive identification of the following mammal species: domestic pig (1 element), white-tailed deer (49 elements), raccoon (1 element), and muskrat (1 element). The only fish identified was sucker (1 element). The domestic pig bone was found in the plough-zone level of a test unit, and the raccoon remains were found in the same level and unit, which may indicate that it too is intrusive/modern. The muskrat remains were found both in Strata C and D, as were the deer elements. The sucker bone was found in Strata D.

Seasonality is indicated by the sucker, a spring spawner, but it is also available throughout the year in the nearby river. The deer and muskrat too are found in the vicinity all year long. Given the proximity of the site to the river, it seems unusual to have so few fish remains in the faunal sample. Perhaps the lack of fish is the result of the sampling error, since only a small portion of the site was excavated (presumably the portion without fish remains) and that a rich deposit of fish bone lies in other unexcavated areas. Another possibility is that the site was occupied during the portion of the year when fish were not spawning. Sucker, walleye and pike are spring spawners and still sought by modern anglers at that time of the year. The paucity of fish remains may also indicate that Johnson Flats is similar to the Sibelius site, a Middle Woodland site on the Thames River west of London,

where deer remains dominated the faunal sample (Fox 1982). If the comparison between these two sites is plausible, then we could suggest that the excavated portion of the Johnson Flats site was occupied during the fall/winter for deer hunting and other related seasonal activities.

Table 5
Johnson Flats AgGx-214 Ceramics Attributes

Cat#	Thickness mm	Max Grit Size mm	Colour		Decoration	
			Interior	Exterior	Interior	Exterior
966	n/a	4	n/a	light brown	n/a	none
467	12	1	grey	light brown	none	none
968	n/a	1	n/a	light brown	n/a	cord marked
969	10	0.5	pinkish brown	pale orange	none	none
970	11	1	grey	light brown	none	none
971	n/a	3.5	n/a	light brown	n/a	none
972	n/a	1	n/a	light brown	n/a	none
973	n/a	1	n/a	light brown	n/a	none
974	n/a	1	n/a	n/a	n/a	n/a
975	n/a	3	n/a	light brown	n/a	none
976	n/a	2	n/a	n/a	n/a	n/a
964	n/a	1	n/a	light brown	n/a	cord marked
965	5	1	grey	light brown	none	cord marked
554	6.5	2	light brown	dark brown	none	cord marked
782	n/a	2.5	n/a	light brown	n/a	cord marked
1192	n/a	2	n/a	light brown	n/a	cord marked
495	n/a	1	n/a	light brown	n/a	none
496	n/a	2	n/a	n/a	n/a	n/a
555	n/a	2	n/a	light brown	n/a	none
212	n/a	1	n/a	pale orange	n/a	cord marked
798	n/a	4.5	n/a	light brown	n/a	none
799	n/a	1	n/a	light brown	n/a	none

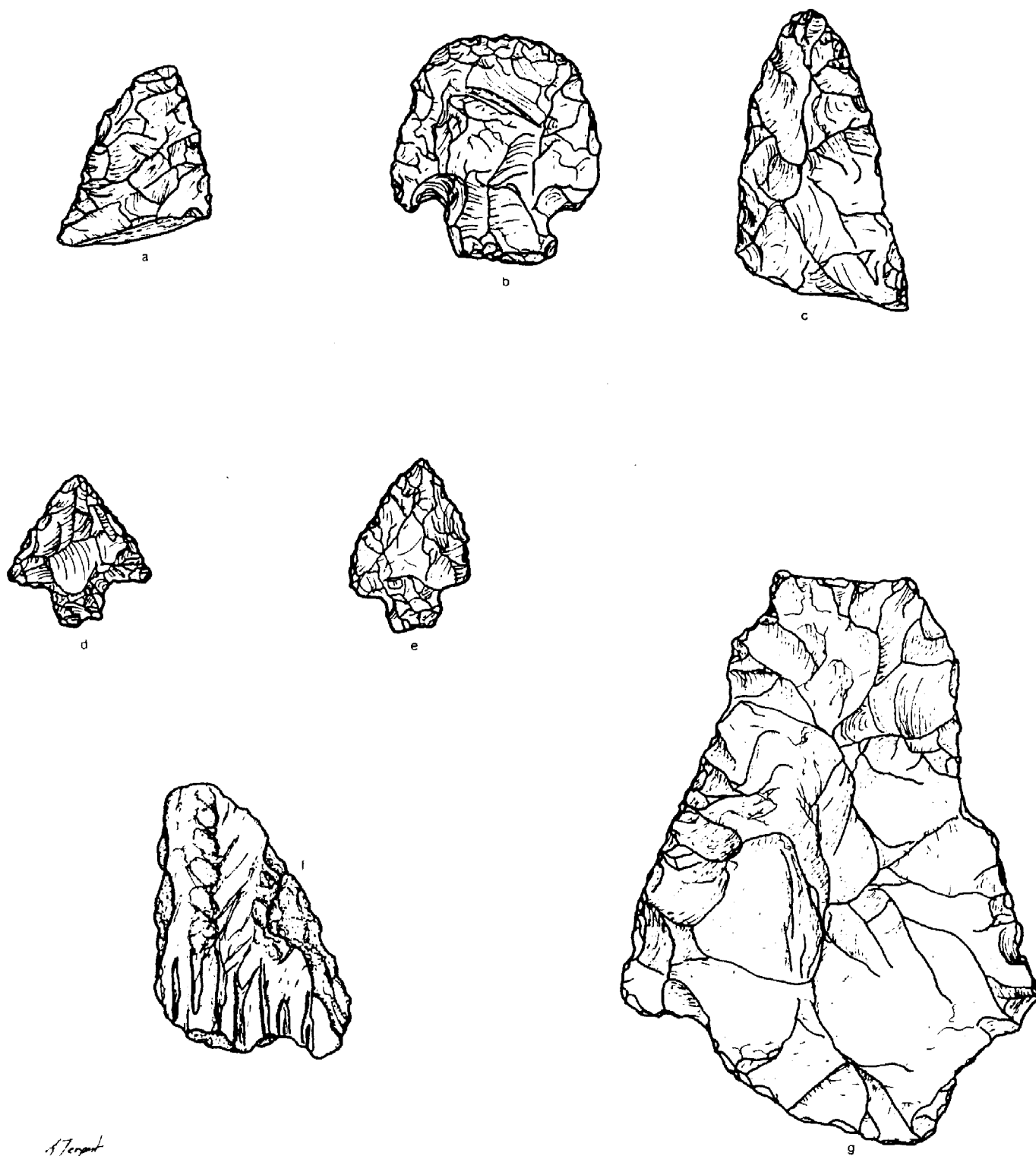


Figure 5: Selected Artifacts. a: point tip; b: "bunt"; c: point tip; d-e: projectile points; f: cord-marked neck sherd; g: broad point. Scale 1:1.

The Johnson Flats site is one of many stratified sites on the Grand River floodplain between Brantford and Lake Erie. Stothers (1977) identified dozens of sites here during his surveys over two decades ago. However, few of these complex sites have been investigated beyond test excavations. The University of Toronto has recently excavated portions of the Grand Banks site near Cayuga as part of their study of the introduction of cultigens into Ontario by the Princess Point complex (Dave Smith: personal communication). The University of Toronto project has reinvestigated Grand Banks and with current geophysical analytical techniques it has refined the interpretation of the stratigraphic sequence originally presented by Stothers (Dave Smith: personal communication).

The Johnson Flats site has not been ploughed in over 25 years, therefore it was not noted by Stothers during his original surveys, since he relied heavily upon ploughed fields to collect his data (Stothers 1977). The archaeological assessment of a proposed pipeline ultimately led to the discovery of Johnson Flats, through the use of test pitting. The deeply buried cultural strata at the site are capped by over 30 centimetres of sediments, and it is suggested that had the site been ploughed and adequately weathered, then subjected to a visual survey, the site may have not been visible. The deeply buried artifacts would have not been brought to the surface by the plough, therefore the site may have been missed. Test pitting of floodplains requires diligent workers who recognize that test pits must be dug to the sterile subsoil. At Johnson Flats test pits ranged from 50 to 90 centimetres deep, whereas at Johnson Heights, situated on a plough-disturbed drumlin, test pits were 30 centimetres deep on average. Archaeological researchers and consultants must not forget that the removal of the original forest cover of Southern Ontario has resulted in the accumulation of thick sediments on the floodplains, thereby capping the original topsoil stratum with practically sterile soils.

The mitigated portion of Johnson Flats represents a small percentage of the site, which may be over one hectare in area, based on the size of the elevated plateau on which the site rests. Test units over 40 metres to the west of the proposed pipeline easement (see Figure 2) were extremely rich, and piece plotting of artifacts in these squares (eg. 0N0E) identified definite clusters of debitage which may be chipping stations. Concentrations of artifacts and calcined bone were also found in the mitigated portion of the site. A possible hearth in association with a large amount of calcined deer bone was found in the northeast corner of this excavated area, and near the position of the broad point we also found a number of large biface thinning flakes, probably the result of the manufacture of the point (see Figure 3). Unfortunately, most of the other artifacts in this part of the site were somewhat diffuse rather than concentrated, and it is suggested that many of them were redeposited by flood waters. The mitigated portion of the site is located at the downstream end of the site, and here Stratum D, the lower culture layer, is about twice as thick as the same stratum found 45 metres upstream (Figure 4). It is possible that artifacts, bone and charcoal were washed downstream from other parts of the site during periodic flooding of the river.

The stratigraphic nature of the site is not complex, but somewhat vague. Stratum C is rich in organics and artifacts, and is definitely a paleosol, an ancient topsoil surface. However, Stratum D is not separated from Stratum C by a sterile layer of silt, but is instead situated right below the more organic

Stratum C. Is Stratum D simply the 'b' horizon of the original soil surface, or is it a heavily leached paleosol in its own right? The broad point and the majority of ceramics were found in Stratum C, and therefore this layer may date from ca. 1500 BP to AD 800 (Ellis et al 1990; Fox 1990). Early and Middle Archaic points, as well as most of the calcined bone were found in Stratum D, and if this layer is a paleosol, then it may be between 8000 and 4000 years old (Ellis et al 1990). Unfortunately, the lack of organic material in Stratum D prevented us from obtaining radiocarbon dates for the layer. Charcoal and organic materials were collected from Stratum C in a bulk soil sample and sent to Dave Smith at the University of Toronto, but since this stratum is topped by a plough-zone, it is doubtful that accurate radiocarbon dates would be available. Further research at this and other similar sites must be conducted to refine the chronological record.

The faunal sample from Johnson Flats included sucker and deer in Stratum D, while muskrat, deer, raccoon and domestic pig were found in Stratum C. Again, more research needs to be conducted at the site in order to obtain a less biased faunal sample. As noted earlier in this paper, the paucity of fish remains at a site on a large river floodplain may be indicative of seasonality, but another part of the site may be rich in fish bone. It is likely that Early and Middle Archaic peoples exploited deer, and the concentration of calcined deer bone in Stratum D supports this, but fish would have also been available. Flotation analysis of the bulk soil sample from Stratum C (now at the University of Toronto) may find evidence of cultigens or other evidence of Princess Point occupation, but until then we do have cord-marked ceramics from this upper cultural stratum, and these sherds are definitely of the transitional Middle to Late Woodland period.

Conclusions

Johnson Flats is an important site with tantalizing evidence from stratified contexts. The discovery and partial excavation of the site was facilitated by the required archaeological assessment and mitigation of the impacts of a proposed natural gas pipeline. The deeply buried nature of the site is not unique, and it is suggested that throughout the floodplains of the Grand River and other major watersheds in Southern Ontario sites like Johnson Flats abound. Diagnostic artifacts from the Early, Middle and Late Archaic, and the early Iroquoian (Princess Point) periods were found in strata which have been identified as paleosols (buried soil horizons).

Only part of the site was excavated, while the remainder lies intact below the manicured floodplain owned by the Johnson family. More sophisticated excavations, such as those conducted by the University of Toronto at the Grand Banks site, would definitely generate data which would answer many of the questions which emerged during our work at Johnson Flats.

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**LONDON CHAPTER, OAS
1994 Treasurer's Report**

		1994	1993
Balance on Hand, January 1		20535.78	17812.63
REVENUES			
	Membership Subscriptions (Canadian & US)	2324.08	1898.87
	Bank Interest	72.35	215.62
	Grants	0	0
	Publication Sales (Canadian & US)	6720.36	2711.52
	Other (1993 OAS Symposium)	na	5295.82
TOTAL REVENUE		9116.81	10121.83
EXPENSES			
	KEWA Production	1162.92	816.32
	Occasional Publications Production	11609.25	na
	KEWA and Book Mailing Costs	1408.42	1131.81
	Administration (rent, refunds, bank charges, insurance, social events, executive member reimbursements, office supplies, Grosvenor Lodge purchases, etc.)	3725.06	1896.97
	Projects (OAS Symposium payment; Walkathon; Grosvenor Lodge Arch.; Historic Plaque)	1611.26	3553.58
TOTAL EXPENSES		19516.91	7398.68
	Excess of Revenue over Expense	-10400.10	2723.15
	Balance on Hand, December 31	10135.68	20535.78

Submitted by Harri Mattila, Chapter Treasurer, January 10, 1995